Single Electricity Market

FINAL RECOMMENDATION REPORT

MOD_07_22 JOINT MARKET REGISTRATION VARIATION IN MIX

20 OCTOBER 2022

Document History

Version	Date	Author	Comment
1.0	11th Nov 2022	Modifications Committee Secretariat	Issued to Modifications Committee for review and approval
2.0	22nd Nov 2022	Modifications Committee Secretariat	Issued to Regulatory Authorities for final decision

Reference Documents

Document Name
Trading and Settlement Code
Mod_07_22 Joint Market Registration Variation in Mix
Industry Call Presentation
Industry Call minutes

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1. MODIFICATIONS COMMITTEE RECOMMENDATION

RECOMMENDED FOR APPROVAL– MAJORITY VOTE

Recommended for Approval by Majority Vote		
Bryan Hennessy	Supplier Member	Approve
Robert McCarthy	DSU Member	Abstain
Ian Mullins	Supplier Member	Approve
Paraic Higgins (Chair)	Generator Member	Approve
Eamonn Boland	Renewable Generator Alternate	Approve
Cormac Fagan	Assetless Alternate	Abstain
Paul McGuckin	Flexible Participant Member	Approve
Cormac Daly	Generator Member	Approve
David Caldwell	Supplier Alternate	Abstain
Brigid Reilly	Supplier Alternate	Approve
Sean McParland	Generator Alternate	Reject
Bryan Hennessy	Supplier Member	Approve

2. BACKGROUND

This Modification Proposal was raised by Tynagh Energy Limited and received by the Secretariat on the 2nd June 2022. The Proposal was raised at Meeting 111 on 16th June 2022, discussed at an Industry call on 18th July 2022, discussed at Meeting112 on 6th September 2022 and voted on at Meeting 113 on the 20th October 2022.

This modification proposal seeks to include a term in the calculation of capacity payments to account for construction-related inflation for new capacity. It is proposed that this adjustment will only be activated in circumstances where construction-related inflation exceeds a standard threshold. This will help to mitigate the risk that projects which secure new capacity contracts will be unable to build as a result of rising inflation costs.

Recent events including re-opening following COVID-19 lockdowns and the Russian invasion of Ukraine have resulted in worldwide inflation spikes. Construction and material costs in particular have seen significant upwards movements. This has amplified the risk of new capacity securing contracts in the Capacity Market, and subsequently incurring costs at a significantly higher rate than expected at the time of securing a contract. This would likely result in projects being abandoned as a result of becoming financially infeasible. Due to the nature of the long-term capacity auctions (T-3 or T-4), it is impossible to accurately predict the actual inflation at the time of bidding into the auction.

While it is reasonable to expect some inflation when bidding for new capacity, it is not possible to forecast inflationary pressures at the level currently being witnessed. This modification is only intended to apply where inflation is beyond a level which could reasonably be managed by participants. As such, we are proposing that any adjustment to capacity payments will discount the 2% target rate of inflation which was applied in the SEM Committee's December 2021 decision to amend price caps.

Tynagh believes that this proposal is consistent with wider policy developments made in order to address inflation. In December 2021, the SEM Committee announced that the auction price cap would be inflated by 2% per annum for the period 2022-2025. While this is a positive development, we believe it does not do enough to address the risk of inflation on new capacity. Firstly, the 2% inflation per annum is used to reflect the standard target level of inflation for Ireland. To address the exposure of new capacity it would be more practical to consider specific construction-related indices for inflation (e.g., Tender Price Index which was 6% in H2 2021). This would be a more accurate representation of the price movements that new projects are exposed to.

Secondly, while adjustments to the Auction Price Cap may seek to address new capacity for upcoming auctions, it does not address the risk faced by projects which have already secured a contract and will continue to face inflation between now and the construction completion date. This modification, if accepted, will help to protect projects from such instances by adjusting capacity payments as calculated in the Trading and Settlement Code.

In May 2022, the Irish Minister for Public Expenditure and Reform announced measures to address the effects of exceptional construction-related inflation on public works contracts. Under the newly introduced framework, third parties with contracts for the delivery of public works may recover inflation-related costs (on materials and energy) from 1 January 2022 onwards. This is clear recognition of the effect of inflation on construction of important infrastructure, and the measures required to address this risk.

We consider this modification proposal to serve a similar purpose in ensuring that essential infrastructure can be delivered in the form of new capacity, in the event of extraordinary inflation changes. We consider this modification appropriate for inclusion in the Trading and Settlement Code given that it will primarily affect the calculation of capacity payments.

3. PURPOSE OF PROPOSED MODIFICATION

3A.) JUSTIFICATION OF MODIFICATION

Recent inflation pressure, particularly in costs relating to construction and materials has created a significant risk of projects securing capacity contracts, but ultimately being unable to build as a result of increased costs. The nature of Capacity Auctions, for New Capacity three to four years out, means there is room for substantial inflation movement between the date of contract award and the beginning of the relevant Capacity Year. In normal circumstances, it may be possible for project developers to account for and manage this cost. However, the current economic climate means that this is no longer possible, and it is highly likely that projects will be faced with significant downside.

In some instances, this issue has already been realised, for example with new renewable energy projects which were awarded contracts under RESS-1 in Ireland. Of the 1,275MW awarded contracts under RESS-1, only 630MW are expected to be energised by the end of this year (which was the expected completion date). It is understood that a number of these project are at risk of never completing, due in part to rising construction costs – in some cases increasing by 10-15%[1].

We believe that measures are required in order to address inflation and secure the delivery of new capacity which is critical infrastructure for the island of Ireland. The necessity of these projects being delivered has been emphasised by security of supply concerns which arose in 2021 as a result of unplanned outages and low-wind periods. As Ireland moves towards an electricity system with greater intermittent generation, the need for new and flexible conventional generation will increase in order to support renewables. Failure to address this risk is likely to expose Ireland to further security of supply concerns and obstruct the transition to a low-carbon electricity system.

In their December 2021 decision to include indexation in the Capacity Auction price caps, the SEM-Committee recognised the significance of inflation to delivery of New Capacity and adjusted the price cap by 6.12% (based on a 2% target level of inflation for each year from 2022-2025). However, this level of inflation is not suitable for two reasons. Firstly, the Russian invasion of Ukraine has further increased inflationary pressures from when the SEM-C decision was made. Secondly, we consider it more appropriate to use a construction-specific inflation rate, given that this is this is the primary cost exposure for new capacity, and construction and materials related inflation has risen at a faster rate than general inflation.

The SEM Committee considered the inclusion of indexation as part of their consultation on the CRM and decided in SEM-16-012 not to include inflation in Capacity Auctions. The rationale provided by the SEM Committee was that participants would be better placed to manage inflation risk, and that the implementation of indexation across two countries would be complex. While this was not previously an issue, current market conditions mean that this approach is no longer appropriate for delivering new capacity projects.

While this modification has the potential to result in slightly higher capacity payments. We believe that ultimately the benefit to the consumer is a net-positive as the risk of supply shortages or potential load-shedding is minimised. The risk of such shortages was highlighted in the SEM in 2021, and if new capacity cannot be delivered, this risk will continue to exist.

3B.) IMPACT OF NOT IMPLEMENTING A SOLUTION

As mentioned above, failure to address this issue will result in significant obstacles for new capacity projects on the island of Ireland. Failure to deliver this critical infrastructure will be detrimental to Ireland's security of supply, and the transition to a low-carbon electricity system.

3C.) IMPACT ON CODE OBJECTIVES

A.2.1.4 The aim of this Code to facilitate the achievement of the following objectives:

b. to facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner;

c. to facilitate the participation of electricity undertakings engaged in generation, supply or sale of electricity in the trading arrangements under the Single Electricity Market; and

g. to promote the short-term and long-term interests of consumers of electricity on the island of Ireland with respect to price, quality, reliability, and security of supply of electricity.

4. WORKING GROUP AND/OR CONSULTATION

N/A

5. IMPACT ON SYSTEMS AND RESOURCES

n/a

6. IMPACT ON OTHER CODES/DOCUMENTS

N/A

7. MODIFICATION COMMITTEE VIEWS

MODIFICATIONS MEETING 111 – 16TH JUNE 2022

The Proposer provided a presentation on this Modification advising that it focus on indexation where an exceptional level of inflation had occurred. The Proposer advised that a decision was not sought at this time, but further discussion and an Industry Call would be preferred followed by a Capacity Workshop in recognition of the impact of this Modification on both the Balancing and the Capacity Markets.

The Proposer noted that this was a very significant Modification that aimed to look at the current levels of inflation and capacity that was not being rewarded. It was advised that it would be difficult to build emergency generation as costs will be so high and unpredictable.

A Renewable Generator Member expressed support with the principle of the Modification and the proposed path forward, noting that there were details to be worked out. This Member noted outcomes of previous auctions and the management of risk associated with the delivery of New Capacity.

A Supplier Member provided support for the Modification but found there were issues with specifics and advised that it may need to be technology specific. A DSU Member echoed support for this fundamentally, noting that a failure to account for indexation reduces the incentive of Capacity Providers to build but advised more discussion with the RAs was needed and more thought required on how the inflation rate is defined. Further support was given for an Industry call and a wider capacity group presence to discuss further the interaction with the ACP which is already being adjusted for inflation.

A Generator Alternate voiced concerns that this might be a retrospective change of the price after the auction is concluded. Another Generator Alternate voiced support for the modification stating that it will help provide relief to the Security of Supply issue.

Flexible Generator Member expressed support for the principle of the Modification but voiced concerns that the two jurisdictions might have different rates and also that the drafting only take into account increases and such adjustments should only be allowed in special circumstances not for any deviation in the inflation rate that could have been foreseen. The long term forecast of inflation would need to be taken into consideration.

Supplier Member raised the question of how this would apply to short term contracts and if they could be classed as new capacity. Also, the point was raised on whether 2% was the correct index to apply or if a set value should be specified at all in the Code.

A Supplier Member supported the Modification, acknowledging the risk that New Capacity was exposed to and stated that a balance is needed between what is a reasonable cost increase versus the risk of no delivery of much needed capacity. In addition, consideration will need to be given to the timelines for this change, noting that New Capacity which has already been awarded contracts are currently being exposed to increased costs and it will be necessary to ensure the change is made in a timely manner.

Assetless Member also voiced concerns that it applies to all units instead of just new capacity.

Secretariat explained that the Industry call was outside T&SC and can continue in tandem with the process. It was also noted that Capacity Market Modification Workshop 26 could be used to discuss this further.

INDUSTRY CALL – 18TH JULY 2022

Cormac Daly (Tynagh) presented a brief overview of rationale for the mod and proposed structure for the industry call. The following topics were raised individually by Tynagh, followed by a window for participant discussion.

Is the modification more appropriate in the TSC or the CMC?

Tynagh outlined the view that the Trading and Settlement Code is the most appropriate location for the modification, given Section F.9.1.2 and F.9.4.4 of the Capacity Market Code. Nonetheless, Tynagh recognised potential value in discussing the mod at the upcoming CMC workshop.

No participants commented on this issue.

Is the modification retrospective?

Tynagh outlined the view that this modification is not retrospective, fundamentally because the TSC looks at the Calculation of Capacity Payments which happens in the present, and that Section F.9.1.2 of the Capacity Market Code fundamentally recognises the possibility of indexation in the TSC.

One participant expressed an understanding of Tynagh's position but disagreed with the interpretation of Section F.9.1.2. They expressed their understanding that any indexation recognised within the CMC referred to any existing indexation included in the TSC, rather than facilitating the introduction of indexation in the TSC in the future.

Another participant queried whether the modification would interact with resettlement of previously settled data. Specifically, if you were re-settling T-1 payments which had originally been settled without indexation. The participant emphasised the need for clarity on a starting-date for the modification to take effect.

A participant expanded on this point seeking clarification on what point this modification would apply to Capacity. Tynagh explained that they envisioned the modification applying to all future payments going forward (i.e., applies to contracts previously awarded but paid out thereafter). This aligns with the objective of the modification to secure New Capacity in response to current spiralling costs.

One participant stated their support for the position outlined by Tynagh, stating that there is a focus on delivering temporary emergency generation for Security of Supply, but there needs to be attention giving to ensuring New Capacity is delivered. Historically, inflation rates have been so low that it is possible they would not have surpassed the threshold for the adjustment to take place.

Should the modification be bi-directional?

Tynagh outlined their position, that initially the modification accounted for upward inflation only, but considering comments from Mods Committee Participants, the modification has been updated to account into deflation as well.

No participants commented on this position.

Inclusion of operational costs in adjustment

Tynagh outlined a proposal from another participant to extend the modification beyond the construction period to account for year-on-year indexation movements within the lifetime of a contract.

One participant expressed confusion at this proposal, noting that the initial modification was designed to increase Capacity Payments to account for increased construction costs. The new position expands this adjustment into operational costs which is more significant.

Another participant stated that while this issue represents an expansion of the adjustment into operational costs, it is a conservative adjustment given the 2% discount on any indexation applied. This participant further noted that the construction period has already been partially accounted for through the 2% indexation applied to Auction Price Caps in SEM-21-110 and that it seems logical to apply indexation to the lifetime of the contract. Specifically, any indexation adjustment should be tied to the duration of any Reliability Option.

Variability of threshold and interaction with Auction Price Cap

Tynagh outlined three approaches to setting the threshold for application of the modification. A fixed percentage, a variable based on Auction Price Cap increases, and a derived value based on the difference between Price Caps in the relevant year and the Capacity Auction year.

One participant expressed concern about the application of a fixed value threshold, based on interaction with SEMO's system. The participant stated that derived values would be more compatible with SEMO.

Another participant agreed with this point, expressing support for a derived, variable threshold, but stated that it would be necessary to ensure that any derivation functions for deflation as well as inflation.

One participant queried how the formula might respond if the Price Cap changes for reasons other than inflation.

Appropriate indices

Tynagh presented a proposal on what indices should be applied to the amendment, specifically that a blend of Tender Price Index and Output Price Indices for New Infrastructure should be used to reflect the two jurisdictions. Tynagh also stated that if the modification was applied to operational costs, as well as construction, it would be more practical to use CPI.

One participant noted that if a blend of index rates were to be used, a 50/50 mix would be more sensible than a 75/25, which would not be accurate. The exact ratio could be based on capacity shares in each jurisdiction, but this could become messy if portfolios evolve over the year.

New vs. Existing Capacity

Tynagh stated that while the preference for the modification and better alignment with its objectives would be New Capacity only, it is difficult to see how this could be implemented in practice. If there is a way to apply the modification to New Capacity only, it would be welcome but If not, it should apply to New and Existing.

One participant stated that they agreed with the principle of applying the modification to both New and Existing Capacity. They stated that an increase in costs across the board means that Capacity providers will be both building and operating at a loss. The participant stated that if applied to Existing, it would be more pragmatic to use CPI rather than a construction-based indices.

Other participants supported this position, stating that units already in operation are also facing a loss, and that other indices (such as CPI) may need to be considered where applied to Existing units.

Another participant agreed with the concept of application to both New and Existing Capacity, given that the TSC does not recognise differences between New and Existing Capacity in the calculation of Capacity Payments. The Participant also noted it would be necessary to ensure that if indexation threshold is based on Auction Price Cap, it will be necessary to define whether it is for the New or Existing Price Cap. **Technology specific**

Tynagh stated that they did not consider it appropriate to make any elements of the modification technology specific.

No participants commented on this position.

Time to solution

Tynagh expressed the urgency with which a solution to this challenge is required. The risk to Security of Supply is real and significant and action is required as soon as possible. Tynagh believe that the mod should be implemented by 1 October 2023.

One participant questioned the timing of the mod and whether the application of an adjustment to Capacity which has already secured a contract would be retrospective. The participant stated that if the modification is applied, it should only be to auctions which are yet to take place.

Another participant disagreed with this statement, stating that the modification is intended to protect those who are participating in the market. They stated that the modification needs to be implemented urgently due to the Security of Supply risk. The participant stated that this mod is required as a result of wider economic inflation which all participants are exposed to, and as such would still represent an even playing-field if implemented after the Capacity Auction. This modification is intended to address increasing costs which were unforeseen.

One participant stated that realistically they did not expect the RAs to approve a modification which affects Capacity which has already been awarded a contract. Tynagh agreed with the idea, but expressed that the modification is not retrospective, as it is concerned with the future settlement of Capacity Payments.

Another participant stated that this issue is a core consideration for the mod as a whole. They could see the merits in both approaches (i.e., modification applied to future auctions, or applied to future payments), but expressed a need to make this very clear. They expressed a concern that if this was not very clearly defined, the RAs would be unlikely to approve in any case.

Next Steps

Tynagh will be discussing the modification at July's Capacity Modifications Workshop, and separately at the next Mods Committee meeting.

Tynagh reiterated their position that they do not consider the modification to be retrospective, nor a change to the design of the CRM.

MODIFICATIONS MEETING 112 – 6TH SEPTEMBER 2022

The Proposer provided a presentation on this Modification advising that there were changes submitted in the V2 of the Mod following an Industry Call on Monday, 18th July 2022. It was advised that this Modification will help to mitigate the risk that projects securing new capacity contracts will be unable to build as a result of unprecedented rising inflation costs. It was also recognized that this Modification had a significant impact and as such would need careful consideration by the SEMC.

A Generator Member believed that this Modification would change payment terms after the relevant Capacity Auction has taken place and is therefore a retrospective change. It was their view that it shouldn't become effective until after the relevant Capacity Auction. The Proposer replied that they had sought legal advice and the proposal was legally sound and robust

Assetless Member stated that Capacity Auction clear at Price Cap each time and that should allow to build in considerable edge room, if that is not happening then the problem is with the calculation of the Price Cap rather than impacting the price post auction. The proposer disagreed that the Price Cap provide a large band width the Capacity Market Code clearly allow for exceptions to be applied in the T&SC so these should be used in these exceptional circumstances.

The Proposer advised that inflation has been negligible in the region of 0.6% for the past decade and it would have been impossible to forecast the current levels likely to go as high as 15% or more according to some forecasts, posing a serious risk to development of projects at a time of security of supply and that needs to be factored into the decision.

Several Members agreed with this Modification in principal but noted that the risk needed to be addressed appropriately along with wider security supply and delivery of capacity. DSU Member agreed with the proposal in principle but there were some clarifications needed on the algebra included in the legal drafting as there is an overlap n the periods used which would compound inflation on different ranges of periods. Some of the definitions would also need to be clarified to provide a distinction and SEMO also noted that the new terms should be included in the Glossary.

Flexible Generator Member expressed concerns at the VAT blend of 50/50 between NI and ROI as this could significantly diverge going forward. The Proposer replied that was a simplification as it would be difficult to assign an exact figure that would last, this was the least controversial.

A question by Supplier Member was raised on whether any scenario had been run on the potential inflation rates and their impact on the lifespan of a project. The Proposer mentioned that analysis has been carried out and inflation would be very noticeable on the first few years and over the life of the project would come down.

It was agreed that clarification was needed on the definition of Relevant Capacity Year, rounding to nearest half year and glossary definitions. The Proposer agreed that these clarifications could be included in the minuting process and a new version would be worked in collaboration with the DSU Member and submitted for voting at the next meeting.

MODIFICATIONS MEETING 113 – 20TH OCTOBER 2022

The Proposer provided a presentation noting that there were additional changes to legal drafting on how the inflation modifier is calculated and thanked the Members who contributed to the final version for their feedback.

DSU Member was happy that the improvements to the legal drafting were satisfactory but was aware of the RAs call for evidence and queried if we should wait until this had occurred. There was also concerns raised that this Modification was retrospective in effect given that it effectively changes the price after the auction has taken place which undermines the integrity of the competitive Capacity Auction process. A Supplier Member queried that they had not seen any assessment of what the modification would cost, noted that it would be suppliers paying for it and wondered what the financial impact would be for Suppliers and consumers with the Proposer advising that they did not have a firm financial figure of the cost but that that it could be 6-8% but the cost of non-delivery of awarded capacity could be much higher. It was pointed out in response to this that the alternative is not necessarily loss of load because not all new capacity awarded is at risk of not delivering, some is already under construction and capacity could still be delivered, the situation was more nuanced than suggested.It was suggested by the proposer that there were similarities between their modification and a previous modification that amended secondary trading arrangements after auctions had taken place. It was pointed out in response that this was a spurious connection to make because there is a fundamental difference between a Modification that improves secondary trading arrangements and one that changes the price after the auction. The Proposer gave response noting that this Modification does not change the capacity auction price but the settlement of it and if not introduced some of the awarded capacity will not be delivered.

A Supplier Member welcomed the fact that security of supply was addressed noting that funds need to be made available for Generators with every megawatt being needed now.

The outstanding RA's call for evidence was addressed and DSU Member noted that it was not for the Committee to predict what inflation will do and it was up to the Committee to put rules in place. It was advised to put this Modification forward to a vote and if the RAs did not approve it then it could be rejected. A question was raised to the RAs regarding the call for evidence and how they planned to progress with it. The RA Alternate communicated that there will likely be a decision that would be made based on the responses received and a publication would be made on the matter albeit not a decision as the call for evidence is not regarded as a consultation as such.

A few Members were not comfortable voting. The Proposer advised that if a vote was delayed the RAs would not be able to progress it because they had indicated that a Modification is the catalyst for change therefore one is required to push the issue forward. Flexible Participant Member noted that Members had legitimate concerns but that the security of supply risk outweighed them It was eventually decided to put this Modification to a vote.

8. PROPOSED LEGAL DRAFTING

As per Appendix 1.

9. LEGAL REVIEW

N/A

10. IMPLEMENTATION TIMESCALE

It is recommended that this Modification is implemented on a Settlement Day basis on the first Settlement Day following system implementation.

1 APPENDIX 1: MOD_07_22 JOINT MARKET REGISTRATION VARIATION IN MIX V3

Proposer *(Company)*	Date of receipt *(assigned by Secretariat)*	Type of Proposal *(delete as appropriate)*	Modification Proposal ID *(assigned by Secretariat)*
Tynagh Energy	**6th October 2022**	**Standard**	**Mod_07_22 v3**

Contact Details for Modification Proposal Originator		
Name	**Telephone number**	**Email address**
Cormac Daly		**c.daly@tynaghenergy.ie**

Modification Proposal Title
Indexation to Calculation of Capacity Payments for New Capacity

Documents affected *(delete as appropriate)*	**Section(s) Affected**	**Version number of T&SC or Agreed Procedure used in Drafting**
T&SC Part B	**Section F.17**	

Explanation of Proposed Change *(mandatory by originator)*
This modification proposal seeks to include a term in the calculation of capacity payments to account for construction-related inflation for new capacity. It is proposed that this adjustment will only be activated in circumstances where construction and operations-related inflation exceed a standard threshold. This will help to mitigate the risk that projects which secure new capacity contracts will be unable to build as a result of rising inflation costs. Recent events including re-opening following COVID-19 lockdowns and the Russian invasion of Ukraine have resulted in worldwide inflation spikes. Construction and material costs in particular have seen significant upwards movements. This has amplified the risk of new capacity securing contracts in the Capacity Market, and subsequently incurring costs at a significantly higher rate than expected at the time of securing a contract. This would likely result in projects being abandoned as a result of becoming financially infeasible. Due to the nature of the long-term capacity auctions (T-3 or T-4), it is impossible to accurately predict the actual inflation at the time of bidding into the auction. While it is reasonable to expect some inflation when bidding for new capacity, it is not possible to forecast inflationary pressures at the level currently being witnessed. This modification is only intended to apply where inflation is beyond a level which could reasonably be managed by participants. As such, we are proposing that any adjustment to capacity payments will discount a target rate of indexation representing indexation applied to the Auction Price Cap (i.e., 2% in the upcoming T-4 auction).

Tynagh believes that this proposal is consistent with wider policy developments made in order to address inflation. In December 2021, the SEM Committee announced that the auction price cap would be inflated by 2% per annum for the period 2022-2025. While this is a positive development, we believe it does not do enough to address the risk of inflation on new capacity. Firstly, the 2% inflation per annum is used to reflect the standard target level of inflation for Ireland. Inflation will be measured based on Consumer Price Index (CPI).

Secondly, while adjustments to the Auction Price Cap may seek to address New Capacity for upcoming auctions, it does not address the risk faced by projects which have already secured a contract and will continue to face inflation between now and the construction completion date and ongoing for the duration of the contract. This modification, if accepted, will help to protect projects from such instances by adjusting capacity payments as calculated in the Trading and Settlement Code. We believe that securing the New Capacity currently in the pipeline will mitigate the risk of needing emergency generation in the short-term, at significant cost to consumers.

In May 2022, the Irish Minister for Public Expenditure and Reform announced measures to address the effects of exceptional construction-related inflation on public works contracts. Under the newly introduced framework, third-parties with contracts for the delivery of public works may recover inflation-related costs (on materials and energy) from 1 January 2022 onwards. This is clear recognition of the effect of inflation on construction of important infrastructure, and the measures required to address this risk.

We consider this modification proposal to serve a similar purpose in ensuring that essential infrastructure can be delivered in the form of New Capacity, in the event of extraordinary inflation changes. We consider this modification appropriate for inclusion in the Trading and Settlement Code given that it will primarily affect the calculation of capacity payments.

Legal Drafting Change

*(Clearly show proposed code change using **tracked** changes, if proposer fails to identify changes, please indicate best estimate of potential changes)*

In order to enact this modification, we propose the inclusion of an additional term Section F.17.1 – Calculation of Capacity Payments.

F.17.1 Calculation of Capacity Payments

F.17.1.1 The Market Operator shall calculate the Capacity Payment (CCPΩγ) for each Capacity Market Unit, Ω, in each Imbalance Settlement Period, γ, as follows:

$$CCP_{\Omega\gamma} = \sum_{n \in \gamma, qCCOMMISS \neq 0} \left(qC_{\Omega n} \times PCP_{\Omega n} \times \frac{1}{ISPIY_y} \times INFMOD_{uy} \right)$$

where:

(a) $qC_{\Omega n}$ is the Capacity Quantity for Capacity Market Unit, Ω, for Contract Register Entry, n, determined in accordance with the Capacity Market Code;

(b) $PCP_{\Omega n}$ is the Capacity Payment Price payable to Capacity Market Unit, Ω, for Contract Register Entry, n, determined in accordance with the Capacity Market Code;

(c) $\sum_{n \in \gamma, qCCOMMISS \neq 0}$ is a summation over all Contract Register Entries, n, for Capacity Market Unit, Ω, relevant in Imbalance Settlement Period, γ, and which has commissioned in accordance with the Capacity Market Code; ~~and~~

(d) $ISPIY_y$ is the total number of Imbalance Settlement Periods in the Capacity Year, y; and

(e) $INFMOD_{uy}$ is the inflation modifier for the relevant Capacity Unit, u, applicable to the relevant Capacity Year, y, calculated in accordance with Section F.17.1.2.

F.17.1.2 The inflation modifier INFMOD, will be calculated on an annual basis at the beginning of each Capacity Year and defined as:

$$INFMOD_{uy} = \left(1 + (CINF_u - AIND_u)\right)^{INFPERIOD_u}$$

where:

(a) $CINF_u$ is the average annualized inflation (or deflation) for Capacity Unit, u, beginning with the date of Capacity award and ending on the date which is the beginning of the relevant Capacity Year where $INFMOD_{uy}$ is calculated. $CINF_u$ will be calculated based on the average Consumer Price Index consisting of an even split between rate in Ireland and the United Kingdom.

(b) $AIND_u$ is the upwards or downwards indexation (if any) applied to the Auction Price Cap in the relevant Capacity Auction, as relevant to the Capacity Unit, u. Where no indexation has been included in the Auction Price cap, AIND is assumed to be zero.

(c) $INFPERIOD_u$ is the period of time, in years rounded to nearest .5, beginning with the date of Capacity award and ending on the date of the beginning of the relevant Capacity Year for which INFMOD is calculated with respect to Capacity Unit, u.

Implementing the modification in this fashion would mean that Capacity Auction results would remain unchanged from how they are currently presented, with the only change occurring to the TSC calculation of Capacity Payments.

It is our intention that the AIND, or Auction Indexation, can be specified on an annual basis prior to a Capacity Auction. In 2021, the SEM Committee included a 2% indexation to the Auction Price Cap, which would represent the AIND for that year. Note that this parameter will only account for indexation applied to a Price Cap (rather than wholesale Price Cap changes themselves).

This modification would require the following terms added to the TSC glossary:

INFMOD is the inflation modifier as calculated in Section F.17.1.2

Calculated Inflation (CINF) is the average annualized inflation (or deflation) for the period beginning on the date when a New Capacity contract is awarded and ending on the first date of the year in which the Capacity Payments are being calculated. CINF should be calculated based on an average inflation rate representing the Consumer Price Index (CPI) in both Ireland and the United Kingdom.

Auction Indexation (AIND) is the rate of indexation applied to Capacity Auction Price Caps. Changes to Auction Price Caps are published each year through the CRM Parameters with respect to each Capacity Auction. Any changes to indexation should be identified within these Parameters decision.

Inflation Period (INFPERIOD) is the length of time in years beginning on the date when a Capacity Contract is awarded and ending on the first date of the relevant Capacity Year during which Capacity Payments will be calculated. INFPERIOD should be rounded to the nearest .5 years.

Modification Proposal Justification *(Clearly state the reason for the Modification)*

Recent inflation pressure, particularly in costs relating to construction and materials has created a significant risk of projects securing capacity contracts, but ultimately being unable to build as a result of increased costs. The nature of Capacity Auctions, for New Capacity three to four years out, means there is room for substantial inflation movement between the date of contract award and the beginning of the relevant Capacity Year. In normal circumstances, it may be possible for project developers to account for and manage this cost. However, the current economic climate means that this is no longer possible, and it is highly likely that projects will be faced with significant downside.

In some instances, this issue has already been realised, for example with new renewable energy projects which were awarded contracts under RESS-1 in Ireland. Of the 1,275MW awarded contracts under RESS-1, only 630MW are expected to be energised by the end of this year (which was the expected completion date). It is understood that a number of these project are at risk of never completing, due in part to rising construction costs – in some cases increasing by 10-15%[2].

We believe that measures are required in order to address inflation and secure the delivery of new capacity which is critical infrastructure for the island of Ireland. The necessity of these projects being delivered has been emphasised by security of supply concerns which arose in 2021 as a result of unplanned outages and low-wind periods. As Ireland moves towards an electricity system with greater intermittent generation, the need for new and flexible conventional generation will increase in order to support renewables. Failure to address this risk is likely to expose Ireland to further security of supply concerns and obstruct the transition to a low-carbon electricity system.

In their December 2021 decision to include indexation in the Capacity Auction price caps, the SEM-Committee recognised the significance of inflation to delivery of New Capacity and adjusted the price cap by 6.12% (based on a 2% target level of inflation for each year from 2022-2025). However, this level of inflation is not suitable for two reasons. Firstly, the Russian invasion of Ukraine has further increased inflationary pressures from when the SEM-C decision was made. Secondly, we consider it more appropriate to use a construction-specific inflation rate, given that this is this is the primary cost exposure for new capacity, and construction and materials related inflation has risen at a faster rate than general inflation.

The SEM Committee considered the inclusion of indexation as part of their consultation on the CRM and decided in SEM-16-012 not to include inflation in Capacity Auctions. The rationale provided by the SEM Committee was that participants would be better placed to manage inflation risk, and that the implementation of indexation across two

[2] https://irishsolarenergy.org/half-of-state-backed-renewable-projects-are-behind-schedule/

countries would be complex. While this was not previously an issue, current market conditions mean that this approach is no longer appropriate for delivering new capacity projects. While this modification has the potential to result in slightly higher capacity payments. We believe that ultimately the benefit to the consumer is a net-positive as the risk of supply shortages or potential load-shedding is minimised. The risk of such shortages was highlighted in the SEM in 2021, and if new capacity cannot be delivered, this risk will continue to exist.	
Code Objectives Furthered *(State the Code Objectives the Proposal furthers, see Section 1.3 of Part A and/or Section A.2.1.4 of Part B of the T&SC for Code Objectives)*	
A.2.1.4 The aim of this Code to facilitate the achievement of the following objectives: b. to facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner; c. to facilitate the participation of electricity undertakings engaged in generation, supply or sale of electricity in the trading arrangements under the Single Electricity Market; and g. to promote the short-term and long-term interests of consumers of electricity on the island of Ireland with respect to price, quality, reliability, and security of supply of electricity.	
Implication of not implementing the Modification Proposal *(State the possible outcomes should the Modification Proposal not be implemented)*	
As mentioned above, failure to address this issue will result in significant obstacles for new capacity projects on the island of Ireland. Failure to deliver this critical infrastructure will be detrimental to Ireland's security of supply, and the transition to a low-carbon electricity system.	
Working Group *(State if Working Group considered necessary to develop proposal)*	**Impacts** *(Indicate the impacts on systems, resources, processes and/or procedures; also indicate impacts on any other Market Code such as Capacity Market Code, Grid Code, Exchange Rules etc.)*
Please return this form to Secretariat by email to balancingmodifications@sem-o.com	